

Building Energy Codes: How to Adopt One in Your Community

Building energy codes, as part of state or local laws, establish minimum standards for energy-related equipment and materials in new construction projects. While Iowa has a statewide code, many communities can more effectively adopt and enforce building energy codes at the local level.

This guide provides tools and resources to help communities incorporate building energy codes into local laws, generating economic and environmental benefits in homes and commercial buildings.

Benefits

An energy-efficient building saves money by reducing energy use. Efficiency also improves the housing stock of a community, making those homes and facilities more comfortable, healthier, and providing improved quality of life.

Additionally, building energy codes promote the use of energy-efficient measures that, in turn, can stimulate economic development. By investing in energy products and services locally – such as appliances from retailers and materials installed by local contractors – jobs are created and investments stay in the area.

In a typical town, \$.70 to \$.80 of every dollar spent on energy leaves the local economy. By decreasing energy bills, those dollars can be spent on other goods and services in the community.

Energy efficiency also helps the environment by reducing air emissions, thereby positively helping Iowa's habitat, air and water resources.

Iowa's Current State Building Energy Codes

The Iowa Department of Public Safety (DPS) is the regulator of the state-level building energy code. The State Fire Marshal, a DPS official, is the acting Building Code Commissioner and is statutorily responsible for recommending to policy makers the building energy code that best fit Iowa.

Iowa's current residential building energy code is the 1992 Model Energy Code. The commercial building energy code is the 1993 codified version of the American Society of Heating, Refrigeration, and Air Conditioning Engineers 90.1-1989 (ASHRAE 90.1-1989).

The commercial code applies to any commercial buildings constructed since 1994 with more than 100,000 cubic feet of enclosed conditioned space. Building energy code requirements for Iowa can be found in Iowa Code Chapter 103A and in the Iowa Administrative Code under IAC 661 (Public Safety), Chapter 16.

Adopting a Local Building Energy Code

Since current state energy codes were adopted more than a decade ago, numerous energy technologies and innovations have been made commercially available in building construction. Several communities are adopting recent versions of building energy codes to take advantage of those increased energy savings.

To help your community adopt a newer building energy code, consider the following steps to be successful:

Organize an Energy Steering Committee. Establish a committee of community members to guide the energy planning process. This committee can be beneficial by bringing together diverse interests and areas of knowledge to help with code adoption. Committee members can educate citizens, talk to city leaders and councils, and bring varying perspectives on the importance of energy efficiency.

Identify a Community "Champion." The cities that have been successful adopting a building energy code relied on a local leader who advocated change. A community champion can act as the key contact person, while organizing and motivating support in the code adoption process. The champion may come from a local building trade, land developer, utility, financial institution, city council, county board of supervisors, conservation board or economic development association, as examples.

Evaluate the Local Energy and Economic Picture. To help leaders make informed decisions, determine the amount of energy your community consumes by contacting your local utility. The utility might also identify incentives they offer for energy efficiency improvements. Also identify current opportunities and barriers for building code adoption and enforcement regarding current city finances, government structure and community operations.

Study Other Community Successes. Research other communities that are successfully implementing building energy codes. Address challenges and opportunities that are similar in your own community.

Know Your City's Code Adoption Process. All Iowa communities must follow a specific process for adopting new codes. It typically takes one year from the beginning of the process until the code is enforceable. Contact city officials to determine the steps you need to follow.

Develop an Action Plan. Draft an action plan that establishes the code adoption process, evaluation of costs, benefits and barriers, and plans for enforcement. Showcase local buildings that meet or exceed recognized building energy codes. Work with local groups to provide education and outreach activities that highlight energy efficiency measures in the buildings and the benefits of a building energy code.

Which Energy Code to Choose?

Residential Buildings

The International Code Council (ICC) is responsible for developing the International Building Code, which is based upon a combination of national standard codes. The ICC has established the 2000 International Energy Conservation Code (2000 IECC) and the newer 2003 International Energy Conservation Code (2003 IECC) as the energy components of the international codes. These codes are the latest and most highly accepted residential building energy codes by professionals in the United States.

Commercial Buildings

The American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) establishes energy standards for the commercial building sector. ASHRAE 90.1-1989 (Iowa's current commercial building energy code) sets envelope requirements based on professional judgment regarding building type, climate, and characteristics. The more recent versions, ASHRAE 90.1-1999 and 90.1-2001 are based on economic justification of energy efficiency, using a life cycle cost approach to balance energy savings with the increased cost of materials and equipment. The 1999 and 2001 versions of ASHRAE's codes are the most accepted commercial codes by professionals in the United States.

How to Enforce Building Codes in Your Community

As part of the building energy code planning process, a community must also consider how those codes will be enforced. Often, the local building code official is responsible for energy codes. However, numerous options are available, especially for communities with limited resources. Some staffing suggestions include:

No Additional Staff – as part of the construction process, building contractors would complete an energy worksheet to demonstrate compliance with the local building energy code. Copies of the worksheets would be kept in the city files with the building permits, and provided to the building owners upon request.

Volunteers – Qualified volunteers would conduct energy inspections on behalf of the community in return for public recognition such as a certificate of appreciation from the mayor and community council and/or a plaque listing years of service and affixed in a public place such as the city hall or library.

As-Needed Part-Time Staff: A local qualified resident, possibly from the building construction trade, could conduct inspections on a part-time basis.

Shared Staff: An existing building official in another community could be shared or contracted with to conduct energy and/or building code inspections. This may be especially beneficial for a countywide program.

Enforcement consequences, though rare, can consist of stop work orders, permit/occupancy sanctions where occupancy of a building is prohibited until corrective actions are taken, or fines.

A building energy code is a beneficial resource for saving energy costs, helping the environment and providing long-term benefits for a community. For more information about building energy codes, please refer to the following resources.

Resources and Links

General Information on Building Energy Codes

- Iowa Department of Natural Resources:
www.iowadnr.com/energy/
Telephone: (515) 281-8941
- U.S. Department of Energy Building Energy Codes Programs:
www.energycodes.gov
- Department of Public Safety, Office of the State Fire Marshal:
[www/state/ia.us/government/dps/fm/building/index.htm](http://www.state/ia.us/government/dps/fm/building/index.htm)
Telephone: (515) 281-5821
- International Code Council (ICC): www.iccsafe.org
- Energy and Environmental Building Association (EEBA):
www.eeba.org
- Alliance to Save Energy/Building Codes Assistance Program: www.ase.org